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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,765	08/30/2001	Vernon M. Williams	4303.1US (99-0584.1)	2595

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EXAMINER

DAVIS, ROBERT B

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 12/19/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,765

Applicant(s)

WILLIAMS, VERNON M.

Examiner

Robert B. Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 6, 9-11 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese reference (6-151,492: figures 1 and 7-9 and abstract).

The Japanese reference teaches an encapsulation mold comprising: first and second mold members (1, 2) having a cavity (13) therebetween extending in a vertical direction as shown in figures 7-9, an injection gate (11) formed at the bottom of the cavity and a vent (7) positioned at the top of the cavity. The reference further teaches a plurality of molding cavities per mold member as shown in figure 1.

3. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese reference (9-162,210 figure 9 and abstract and partial machine translation).

The Japanese reference teaches first and second mold members (1, 5D) having a cavity for positioning a ball grid array for encapsulation wherein the cavity has an injection gate (7") and a gate (8") at the bottom and top of the cavity as shown in figure 9.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, 7, 8 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese reference (-492) taken together with Japanese reference (11-97,470: figure 1 and abstract).

The Japanese reference (-492) discloses all claimed features except for one of the mold surfaces having indentions to support a BGA assembly.

Japanese reference (-470) discloses a mold member (2) having recesses (5) formed in the surface thereof to support the balls of the BGA to properly position the assembly in the mold.

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the apparatus of Japanese reference (-492) by having a mold surface with indentations to support a BGA assembly as disclosed by Japanese reference (-470) for the purpose of encapsulating a BGA assembly while protecting the electrical connection surfaces located within the indentations during the molding procedure.

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese reference (-210) taken together with Japanese reference (11-97,470: figure 1 and abstract).

The Japanese reference (-492) discloses all claimed features except for one of the mold surfaces having indentions to support a BGA assembly. Please note the reference does disclose support of a BGA assembly.

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Japanese reference (-470) discloses a mold member (2) having recesses (5) formed in the surface thereof to support the balls of the BGA to properly position the assembly in the mold.

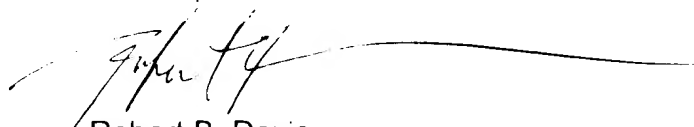
It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the apparatus of Japanese reference (-210) by having a mold surface with indentations to support a BGA assembly as disclosed by Japanese reference (-470) for the purpose of encapsulating a BGA assembly while protecting the electrical connection surfaces located within the indentations during the molding procedure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert B. Davis whose telephone number is 703-308-2625. The examiner can normally be reached on Monday-Friday 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan H. Silbaugh can be reached on 703-308-3829. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Robert B. Davis
Primary Examiner
Art Unit 1722

12/15/02

December 15, 2002